PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Jesus Prieto VALTUENA, et al
Serial No.: 09/674,445 Group No.: 1614
Filed: November 1, 2000 Examiner.: Jegatheesan Seharaseyon
For: UTILIZATION OF INTERFERON ALPHA 5 IN THE TREATMENT OF VIRAL HEPATOPATHIES

Attorney Docket No.: U 013039-2

Assistant Commissioner for Patents
Washington, D.C. 20231

RESPONSE TO RESTRICTION ACTION

In response to the Official Action of 30 July 2002, wherein the Examiner has required restriction under 35 USC 121 and 372, Applicants hereby elect to prosecute in the present application the invention of Group I and the method of treatment involving administering IFN-alpha 5 polypeptide. This election is made with traverse for reasons next discussed.

Under PCT unity of invention rules, unity of invention has to be considered in the first place only in relation to the independent claims in an

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application and not the dependent claims. If the independent claims avoid the prior art and satisfy the requirement of unity of invention, no problem of lack of unity arises in respect of any claims that depend on the independent claims (see Annex B to Administrative Instructions Under the PCT).

In the present case, the Examiner apparently does not consider the independent claim (Claim 11) to avoid the prior art on the basis that the cited Foster et al and Davis references (cited in the International Search Report) allegedly destroy novelty of the claimed invention. Applicants respectfully disagree.

Claim 11 is directed to a method of treating liver diseases marked by lower than normal levels of IFN-alpha 5. As described in the present specification, there is a marked reduction in the expression of IFN-α5 in liver tissue in case of HCV infection. As discussed next, one of skill in the art could not have expected such reduction from the cited references, and could thus not have practiced the claimed method with even a reasonable expectation of success.

The closest prior art, represented by Document D1 (Foster) in the International Search Report, shows the anti-viral activity of several I subtypes of IFN, including IFN-α5, *in vitro* (in human liver tumor cell lines) against EMC (murine encephalomyelitis) virus. The reference does not show whether or not IFN-α5 has a preference for any particular tissue, and the reference acknowledges that the role of each type I IFN remains obscure (page 1032, right column). Indeed, after presenting

an initial hypothesis that the existence of a multiplicity of alpha IFN subtypes might be due to different tissue responses to particular subtypes, the reference leads in the opposite direction by acknowledging that this hypothesis was not supported by the results reported in the reference (page 1032, right column). To the contrary, the results show that the antiviral properties of the different subtypes were broadly similar in the three (3) tissues/cell lines tested (one of which was a liver tumor cell line). Accordingly, the Foster reference does not teach, and in fact teaches away from, an expectation that IFN-α5 might be effective in any particular tissue.

The secondary reference, Davis (Document D2 in the International Search Report), cannot supplement this deficiency in the primary reference. It does not teach a preference of IFN-alpha 5 for any particular tissue, and in fact describes only treatment with a recombinant IFN-α2b. It is thus clear that the reference disclosures, either alone or in combination, could not be used to provide even a reasonable expectation of success with the claimed method, which recites the administration of IFN-α5 to treat disease in a particular tissue, i.e., the liver. This is recognized in the International Preliminary Examination Report where it is stated (Section V, paragraph 4):

> "Thus , on the basis of D1 and D2, the problem to be solved by the present invention may be regarded as finding out whether or not IFN-α5 has a preference for a particular tissue. As it has been shown, that there is a marked reduction in the expression of IFN-α5 in liver tissue

in case of HCV infection, **which could not have been expected**, the subject-matter of claim 1 and dependent claims 2-9 seems to be inventive." (Emphasis added.)

Accordingly, the reference not only does not anticipate the invention defined by the independent claims, it does not render such claims *prima facie* obvious. See MPEP Section 706.02(j) (stating that, to establish a *prima facie* case of obviousness, there must be a reasonable expectation of success.)

In view of the above, it is respectfully submitted that the independent claims presently of record avoid the prior art and satisfy the requirement of unity of invention. Accordingly it is respectfully submitted that all claims presently on file should be examined in this application.

Respectfully submitted,

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